

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended) In an optical system for viewing an object illuminated by a light beam and having an objective aperture through which the light beam passes, the improvement comprising:

rotatable means permitting the continuous passage of light through the objective aperture, but limiting the light beam to passing through only a portion of the objective aperture; and

means for continuously rotating said rotatable means a plurality of revolutions to continuously ~~changing change~~ the portion of the objective aperture through which ~~the light beam~~ passes while the object is being viewed ~~to create motion parallax~~ whereby the object is illuminated from a continuously changing angle, creating motion parallax and 3D viewing.

Claim 2 (original) The improvement of claim 1 wherein the optical system is further described as having a viewing path and the objective aperture is in the viewing path.

Claim 3 (original) The improvement of claim 1 wherein the optical system is further described as having an illumination path and the objective aperture is in the illumination path.

Claim 4 (original) The improvement of claim 3 wherein the illumination path is further described as including a light source and the objective aperture

is between the light source and the object.

Claim 5 (original) The improvement of claim 2 wherein the viewing path is further described as including an eye point and the objective aperture is between the eye point and the object.

Claim 6 (original) The improvement of claim 2 wherein the viewing path is further described as including an eye point and the objective aperture is at the eye point.

Claim 7 (currently amended) In an optical system for viewing an object and having an objective aperture with an axis through which light passes, the improvement comprising:

~~a dynamic aperture mask disposed at the objective aperture.~~

a dynamic aperture mask having an aperture located at the objective aperture which continuously allows light to pass, but limits the area of the objective aperture through which light passes to only an off axis portion of the objective aperture; and

means for continuously rotating the mask through multiple rotations, which causes the portion of the objective aperture that passes light to continuously rotate about the objective aperture axis and thereby continuously change the angle of illumination and thereby create motion parallax.

Claim 8 (original) The improvement of claim 7 wherein said dynamic aperture mask is an array of LCDs.

Claim 9 (previously amended) The improvement of claim 7 wherein said dynamic aperture mask is an opaque disk with a sector-shaped aperture.

Claim 10 (original) The improvement of claim 7 wherein said dynamic aperture mask is overlapping leaflets.

Claim 11 (original) The improvement of claim 7 wherein said dynamic aperture mask is two overlapping semi-circular opaque discs.

Claim 12 (original) The improvement of claim 7 wherein said dynamic aperture mask is a plurality of sector-shaped LCDs.

Claim 13 (original) The improvement of claim 7 wherein said dynamic aperture mask has a variable size aperture.

Claim 14 (canceled)

Claim 15 (currently amended) The improvement of claim 13 wherein ~~the objective aperture is further described as having an axis and~~ said variable size aperture is an iris diaphragm disposed off the objective aperture axis.

Claim 16 (original) The improvement of claim 7 wherein the aperture in said dynamic aperture mask has the shape of a sector of a phase annulus.

Claim 17 (currently amended) In an optical system for viewing an object and having an objective aperture through which light passes, the improvement comprising:

a carrier disposed at the objective aperture and moveable relative thereto;

a plurality of dynamic aperture masks on said carrier each of which can be aligned with the objective aperture by moving said carrier relative thereto wherein each said dynamic aperture mask comprises:

an aperture located at the objective aperture which continuously allows light to pass, but limits the area of the objective aperture through which light

passes to only an off axis portion of the objective aperture; and means that continuously rotates the mask through multiple rotations, which causes the portion of the objective aperture that passes light to continuously change and thereby continuously change the angle of illumination and thereby create motion parallax.

Claim 18 (currently amended) The improvement of claim 17 wherein the apertures of said dynamic aperture masks are sectors of circles of different sizes.

Claim 19 (original) The improvement of claim 17 wherein the apertures of said dynamic aperture masks are sectors of phase annuli of different sizes.

Claim 20 (withdrawn) In an optical system having an objective aperture for viewing an object the improvement comprising:

a shaped light beam continuously passing through a different portion of the objective aperture.

Claim 21 (withdrawn) The improvement of claim 13 wherein said shaped light beam is from an array of LEDs.

Claim 22 (currently amended) In a method for creating a 3-D view of an object in an imaging system having an objective aperture with an axis through which a light beam passes, the steps comprising:

causing the light beam to pass through only a portion of the objective aperture; and

continuously ~~rotating~~ moving the light beam about the objective aperture axis within the objective aperture to create motion parallax whereby the object

is viewed in 3-D.

Claim 23 (currently amended) The method of claim 22 wherein a dynamic aperture mask is used to cause the light to pass through only a portion of the objective aperture and rotate about the objective aperture axis wherein said dynamic aperture mask comprises an aperture located at the objective aperture which continuously allows light to pass, but limits the area of the objective aperture through which light passes to only an off axis portion of the objective aperture; and means for continuously rotating the mask through multiple rotations, which causes the portion of the objective aperture that passes light to continuously change and thereby continuously change the angle of illumination and thereby create motion parallax.

Claim 24 (original) The method of claim 22 wherein an array of LCDs is used to cause the light to pass through only a portion of the objective aperture.

Claim 25 (original) The method of claim 22 wherein an array of LEDs is used to cause the light to pass through only a portion of the objective aperture.

Claim 26 (original) The method of claim 22 wherein a shaped beam is used to cause the light to pass through only a portion of the objective aperture.

Claim 27 (previously presented) The method of claim 22 wherein the imaging system is a light microscope having an illumination path including the objective aperture and a viewing path having at least one additional objective aperture wherein the objective aperture through which light passes through only a portion is in the illumination path.

Claim 28 (previously presented) The method of claim 22 wherein the

imaging system is a light microscope having an illumination path including the objective aperture and a viewing path having at least one additional objective aperture wherein the objective aperture through which light passes through only a portion is in the viewing path.

Claim 29 (original) The method of claim 22 wherein the imaging system is a light microscope having a light source wherein the objective aperture through which light passes through only a portion is in the light source.

Claim 30 (original) The method of claim 22 wherein the imaging system is a light microscope having a photo tube and the objective aperture through which light passes through only a portion is at the photo tube.

Claim 31 (original) The method of claim 22 wherein the imaging system is a light microscope having an eye piece and the objective aperture through which light passes through only a portion is at the eye piece.

Claim 32 (previously presented) The method of claim 22 wherein the microscope is a phase contrast microscope.

Claim 33 (original) The method of claim 29 wherein the microscope is a phase contrast microscope.

Claim 34 (currently amended) In a phase contrast microscope having a light source with an objective aperture that has an axis and through which light is directed the improvement comprising:

dynamic aperture means ~~limiting the light beam to passing through only a portion of the objective aperture and continuously changing the portion of the objective aperture through which light passes to create motion parallax~~

permitting the continuous passage of light through the objective aperture, but limiting the light to passing through only an off axis portion of the objective aperture and;

means continuously rotating said dynamic aperture about the objective aperture axis multiple revolutions to create motion parallax.

Claim 35 (currently amended) In the phase contrast microscope of claim 34 where the dynamic aperture means is ~~a dynamic~~ an aperture mask.

Claim 36 (canceled)

Claim 37 (original) In a method of creating a three dimensional model of a three dimensional object having a plurality of elements using a light microscope having an objective aperture through which a light beam passes and a focal plane the steps comprising:

locating the microscope focal plane at various locations within the object;

for each location of the focal plane within the object:

cause the light beam that passes through the objective aperture to pass through only a portion of the objective aperture;

continuously change the portion of the objective aperture through which the light beam passes.

Claim 38 (currently amended) ~~The method of claim 37 further comprising the steps of:~~

In a method of creating a three dimensional model of a three dimensional object having a plurality of elements using a light microscope

having an objective aperture through which a light beam passes and a focal plane the steps comprising:

locating the microscope focal plane at various locations within the object;

for each location of the focal plane within the object:

cause the light beam that passes through the objective aperture to pass through only a portion of the objective aperture;

continuously change the portion of the objective aperture through which the light beam passes;

digitize the image of the object at each location;

eliminate from the digitized image all elements of the object that change location while the portion of the objective aperture through which the light beam passes is continuously changed thereby obtaining a focal plane specific image;

combine the focal plane specific images for each location of the focal plane within the object.

Claim 39 (withdrawn) In a method of creating a three dimensional model of a three dimensional object using a light microscope having a focal plane the steps comprising:

viewing the object with the microscope focal plane at various locations within the object;

for each location of the focal plane within the object, causing the angle of view to continuously change.

Claim 40 (withdrawn) The method of claim 39 wherein the object is composed of a plurality of elements and further comprising the steps of:

creating a digitized image of the object at each location of the focal plane;

eliminating from each digitized image those elements that change location with time to create a focal plane specific image.

Claim 41 (withdrawn) The method of claim 40 further comprising the step of:

combining the focal plane specific images.

Claim 42 (original) In an endoscopic device having an optical path for light that includes a probe and lens with an objective aperture for entering into a body to transmit a view of the interior thereof to a viewing system outside the body, the improvement comprising:

an objective aperture outside the body in the optical path between the lens and the viewing system; and

means continuously changing the portion of said objective aperture outside the body that passes light.

Claim 43 (original) The improvement of claim 42 wherein said means is a dynamic aperture mask disposed at said objective aperture.

Claim 44 (original) The improvement of claim 43 wherein said dynamic aperture mask is an array of LCDs.

Claim 45 (original) The improvement of claim 43 wherein said dynamic aperture mask is an expandable bellows.

Claim 46 (original) The improvement of claim 43 wherein said dynamic aperture mask is overlapping leaflets.

Claim 47 (original) The improvement of claim 43 wherein said dynamic aperture mask is two overlapping semi-circular opaque discs.

Claim 48 (original) The improvement of claim 43 wherein said dynamic aperture mask is a plurality of sector-shaped LCDs.

Claim 49 (original) The improvement of claim 43 wherein said dynamic aperture mask has a variable size aperture.

Claim 50 (original) The improvement of claim 49 wherein said variable size aperture is sector shaped.

Claim 51 (new) A dynamic aperture mask for creating motion parallax in an imaging system having an objective lens and objective apertures comprising:
an opaque disk with a sector shaped opening disposed at an objective aperture;

a motor operatively connected to said opaque disk for continuously rotating said disk multiple revolutions.